

METHOD FOR PRODUCING ALUMINATE-BASED FLUORESCENT SUBSTANCE

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Abstract

PROBLEM TO BE SOLVED: To provide a method by which an aluminate-based fluorescent substance having a high emission luminance and a uniform composition can readily be produced.

SOLUTION: This method for producing an aluminate-based fluorescent substance comprises mixing an aqueous solution containing a cation of at least one kind of metal element selected from Ba, Mg, Eu, Mn, Sr, Ca, Tb, Ce and Zn with an aluminum compound, an organic acid and an organic solvent, drying the prepared mixture and then baking the resultant precursor within the temperature range of 1,000-1,700 deg.C. Furthermore, there is provided the method for producing the aluminate-based fluorescent substance which is a compound prepared by adding Eu and/or Mn as an activator to a compound oxide substrate represented by general formula $x_1M_1O.y_1MgO.z_1Al_2O_3$ (M_1 is at least one kind selected from Ba, Sr and Ca) or a compound obtained by adding Tb and/or Mn as an activator to a compound oxide substrate represented by general formula $x_2CeO_{1.5}.y_2M_2O.y_2Al_2O_3$ (M_2 is one kind selected from Mg and Zn). The aluminate-based fluorescent substance is obtained by either one of the methods for production and comprises ≥ 80 wt.% of particles having ≥ 0.05 to $\leq 5 \mu m$ primary particle diameter.

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